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The Influence of E-Sports on Economy Education and Cultural Communication

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Abstract: The growing popularity of eSports has attracted significant attention due to its potential influence beyond the realm of entertainment. This paper investigates the effects of eSports on the economy, education, and cultural communication. By exploring how eSports platforms and events provide avenues for generating profit, facilitating learning, and fostering cultural exchange, the study seeks to reveal the diverse impacts of digital gaming on both business and education, as well as its role in global communication This study employs a descriptive-qualitative methodology, examines case studies to evaluate the industry's economic prospects, educational advantages, and the cross-cultural connections promoted by eSports. The results demonstrate that eSports is a versatile platform that not only improves digital literacy and collaboration skills but also acts as a conduit for cultural understanding in an increasingly interconnected world. Furthermore, economic revenues from e-sports continue to grow annually. Grasping these dynamics is essential for educators, policymakers, and stakeholders aiming to harness digital gaming for economic, educational and cultural progress.

Keywords: *eSports, Education, Cultural communication, Digital literacy, Serbia.*

Introduction

In recent years, the rise of e-sports has captivated global attention, not only as a burgeoning industry but also as a cultural and educational phenomenon. At the beginning of this century, the eSports industry was still not a significant player, although it already existed as a niche within video and computer gaming. Its economic aspect and interest in this regard only began to grow with the emergence of the internet and its infrastructure. Today, eSports holds great significance, particularly among the younger generation. Professional players from around the world compete against each other in numerous tournaments, both online and offline, and are enthusiastically followed by millions of fans. (Block and Haack, 2021) E-sports, defined as competitive video gaming facilitated by electronic systems, has rapidly evolved from a niche interest to a mainstream cultural activity with significant implications for education and cultural communication. This paper explores the multifaceted influence of eSports on these domains, aiming to uncover how this digital subculture shapes educational practices and enhances cultural exchanges in contemporary society. Esports is a complex social phenomenon, but it is often regarded solely as a business or economic industry. (Jonasson and Thiborg, 2010). Major corporations such as Microsoft, Samsung, and Red Bull have garnered considerable attention by contributing to the professionalization and global participation in esports (Pizzo, et al., 2018). Some authors confirm that eSports athlete (or e'athlete as an abbreviation) is a suitable term that encapsulates individuals who compete in any esports to achieve an in-game ranking or who compete in a formalized competition (Bubna, et al., 2023).

The integration of Sports into educational settings has sparked discussions on its potential benefits and challenges. Advocates argue that eSports can foster critical thinking, teamwork, and strategic

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decision-making skills among participants, mirroring the cognitive demands of traditional sports. Moreover, its appeal among youth populations presents an opportunity to engage students in learning through mediums they find inherently motivating. Conversely, critics raise concerns about the sedentary nature of gaming and its potential to detract from physical activity and traditional forms of education.

Culturally, eSports serves as a global platform for communication and interaction, transcending geographical boundaries and cultural differences. Through live-streamed tournaments, online communities, and fan engagement, e-sports cultivates a shared language of competition and camaraderie among diverse audiences worldwide. This cultural exchange not only promotes understanding and tolerance but also challenges conventional notions of sports and entertainment. e-sports seem not only to be about playing computer games, but can also serve as a means of satisfying the need to belong (Martončik, 2015) .

One of the main catalysts for the rapid expansion of eSports in recent years has been live streaming, particularly through platforms such as Twitch.tv and YouTube. Since its launch in 2011, Twitch has transformed the gaming industry, making it easier for content creators to broadcast their gameplay live. Before Twitch, real-time gaming broadcasts were both costly and complicated. Twitch simplified this process, making live streaming more accessible and widespread.The digital nature of eSports has proven to be a valuable competitive alternative, especially during times of crisis, offering distinct advantages over traditional sports. One area worth exploring is the distinction between amateurs and professionals in the eSports realm. Unlike many traditional sports, competitive video gaming does not consider age as a limiting factor. The structure of eSports competitions can be compared to the pro-am setup found in various sports tournaments. The participation of amateurs alongside professionals allows younger players to transition to a professional level at an earlier age. (Kane, and Spradley, 2017). To fully harness the potential of eSports, global engagement in the development of policies and regulations governing this ever-evolving sector is essential. This engagement requires close collaboration between governments, international organizations, the industry, and the eSports community to develop consistent and unified guidelines that will direct the sustainable growth of the sector (Ceruso, 2024). Esports has even penetrated higher education as an intercollegiate sport, with two university sports departments officially recognizing eSports as a sports team and providing scholarships for eSports athletes. This connection between eSports and collegiate sports raises the question of whether eSports should be considered a sport by the broader community. (Jenny, et al., 2017).

Methodology

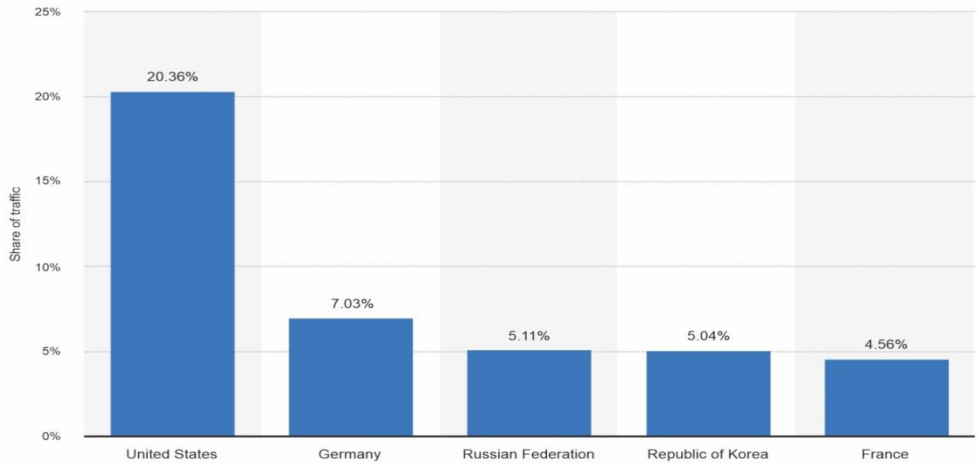
The academic exploration of eSports remains relatively limited, with available data on the subject being sparse. This study employs a descriptive-qualitative methodology. Initially, we investigate the primary financial elements of the eSports industry, including its global revenue, popularity, and level of recognition. We analyze the critical growth drivers that have shaped the eSports sector and are expected to influence its future trajectory. Subsequently, we evaluate the impact of eSports on education and its role in connecting young people globally. Lastly, we review the history, evolution, and current status of eSports in Serbia.

The influence of eSports on economy

The conflation of gaming and eSports is common in the local market, making it essential to differentiate between these two concepts. eSports is only a part of the gaming industry, while gaming encompasses all games that can be played on computers, tablets, gaming consoles (such as Sony PlayStation, Xbox...), or phones. eSports is a competitive sports discipline where the typical setup involves 10 computers divided into two groups (commonly referred to as 5 vs. 5), with two teams competing according to specific game rules. In summary, modern scholars appear to share a common framework for defining eSports. With subtle distinctions, they generally view eSports through two key criteria: technological specificity (involving computers, cyberspace, and electronics) and competitive excellence (encompassing athleticism, professionalism, and sport). These criteria are closely linked to video game culture, positioning eSports as an extension of gaming itself (Karhulahti, 2017).

Like any other industry, the eSports sector also requires marketing approaches (Dašić and Jeličić, 2016). To enable audiences to follow competitions happening worldwide, live broadcasts are often streamed on platforms such as YouTube and, more recently, Facebook. One of the most prominent platforms is Twitch, although other platforms may also be popular depending on the target market (see Figure 1). In addition to participating in competitive games, many players frequently play games for themselves and, by streaming these games, gain fans and followers, thereby generating revenue.

Figure 1. Regional distribution of desktop to Twitch as of December 2023 by country

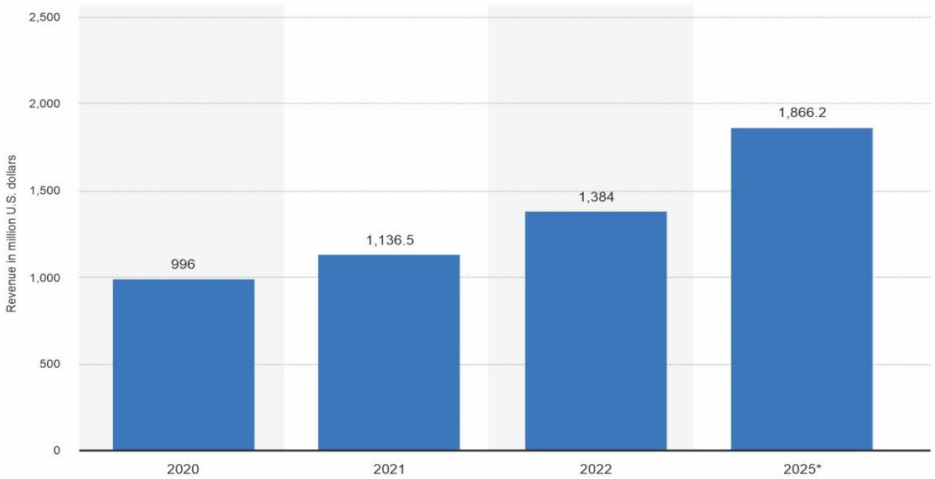


Source: https://www.statista.com/statistics/511558/twitch-traffic-by-country/

EU statistics reveal extensive participation in video games, with one in two EU citizens engaging in gaming in some way. In 2022, the industry produced €179 billion in revenue, with a notable share from mobile games. Europe hosts 5,000 video game companies that provide jobs for more than 74,000 individuals. Moreover, video game technologies and skills are applied in various other fields, including film production, training, healthcare, and defense, highlighting their broad utility and influence. According to recent forecasts 60 percent of Americans play video games daily, 41 percent of players use personal computers and first-person shooters are the most popular multiplayer games (Khromov, et al,. 2019).

Gaming industry today represents the fastest-growing sector in the world, having surged by 10% from 2016 to 2017. Leading the market are China ($46.4B), the USA ($44.0B), Japan ($19.1B), South Korea ($7.4B), and Germany ($6.5B), among others (Newzoo, 2023). As for eSports, as shown in Figure 2, this segment of the gaming industry is also experiencing rapid growth. Esports is a rapidly growing industry that attracts a high number of players and has a high economic value (Thiel and John, 2018).

Figure 2. Esports market revenue worldwide from 2020 to 2025 (in million U.S. dollars)



Source: https://www.statista.com/topics/3121/esports-market/

In recent years, eSports have gained traction as a significant social phenomenon, with support from networks like BBC, OSN, SporTV, and Super Channel, alongside online streaming platforms such as Twitch (owned by Amazon) and YouTube (owned by Google). This type of content is particularly popular among millennials, especially young men. In 2019, the gaming video content (GVC) audience grew by 5%, reaching 944 million viewers. Despite a smaller audience, Twitch outperformed YouTube in revenue generation, earning $1.54 billion compared to YouTube's $1.46 billion, thanks to stronger monetization strategies. Streaming platforms play a role beyond simple distribution, as they allow streamers to achieve economic sustainability using the monetization tools available through these platforms. Sponsors are crucial to eSports, providing financial support and promotion. Companies such as Dell and Monster Energy sponsor teams and events, while game developers like Riot Games and Activision are essential for creating and maintaining games. (Cacho-Elizondo, Álvarez and Garcia, 2020).

Both qualitative and quantitative data reveal that brands, including sponsors and sports clubs, are increasingly engaging with eSports to connect with a new, younger, and predominantly male demographic (Vuković, Dašić, Vuković, 2024). The data highlight how eSports is not only growing in prominence but also how streaming is becoming a crucial economic sector within this space. eSports players are leveraging streaming to generate revenue through various channels such as tournament winnings, fan donations, and sponsorships. This shift underscores the expanding economic impact of both eSports and streaming, as they provide new opportunities for financial gain and audience engagement. (Wohn and Freeman, 2020; Bertschy, Muhlbacher, and Desbordes, 2020; Riatti and Thiel, 2022).

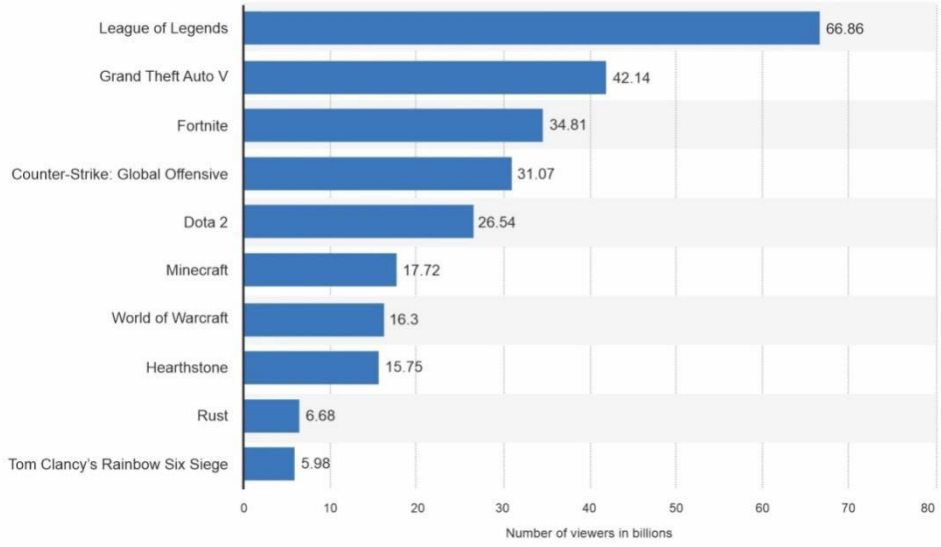
Esports is increasingly incorporating features from other markets, with rising compensation for top players driven by advancements in communication technologies and online streaming. This has resulted in a substantial increase in the prize pools available at tournaments. Game developers have realized they can monetize tournament-related expenses directly through ticket sales and broadcasting rights, and indirectly by promoting additional in-game purchases. To draw in audiences, tournament organizers aim to attract elite players with ever-larger prize pools. Although prize funds for professional gamers differ depending on the game and tournament location, most have surged from minimal amounts a decade ago to over $100 million in prizes today. (Ward and Harmon, 2019).

Several authors (Haji Rasouli and Kumarasuriyar, 2016; Scholz, 2019; Nyström et al., 2022) suggest that as esports continue to grow, sustainability will become increasingly relevant for all stakeholders, even though some participants in the ecosystem often pay insufficient attention to it. It is crucial to explore the sustainability of esports from new perspectives, including economic, ecological, and social dimensions.

The influence of eSports on education end cultural communication

The explosive rise in eSports popularity has significantly increased the volume of academic research focused on organized, competitive gaming. This field has rapidly evolved from non-existence to a recognized area of study within disciplines such as business, sports science, cognitive science, computer science, law, media studies, and sociology. (Reitman, et al., 2020). The integration of eSports into the education of young people has long been recognized as a significant factor in their overall development. The North American region dominated the eSports market, accounting for approximately 29% of global revenues in 2022. Games like League of Legends (LoL), Dota 2, and Fortnite (see Figure 3) have emerged as major catalysts for the growth of eSports, drawing in large and enthusiastic fanbases. Awareness of eSports is expanding rapidly, with nearly two billion people having heard of it at this point. Concurrently, the demand for eSports events is increasing at an impressive double-digit rate each year, reflecting the sector's rising popularity and engagement. (Newzoo, 2023).

Figure 3. Most popular games on Twitch worldwide as of December 2023, by all time views (in billions)



Source: Twitch most popular games by all time viewers 2023.

In the digital age, eSports has emerged as a global phenomenon with profound implications for cultural communication. Esports, or competitive video gaming, has evolved beyond entertainment to become a significant platform for cross-cultural interaction and exchange (Barjaktarović, 2023). Esports facilitates unprecedented levels of cultural exchange through its widespread digital presence and international tournaments. The competitive nature of e-sports attracts diverse audiences from various cultural backgrounds, creating a shared space where individuals can interact and engage with each other's cultures. Online platforms such as streaming services and social media play a crucial role in this interaction, enabling real-time communication and collaboration among players and fans across the globe (Vuković, Urošević, and Dašić, 2023). In the field of education, eSports facilitates the development of cognitive and social skills, such as critical thinking, problem-solving, teamwork, and communication. These skills can be applied across various academic and professional contexts. (Dambrosio, 2024)

One of the key aspects of eSports' influence on cultural communication is its ability to transcend geographical and linguistic barriers (Dašić, 2023). Games often feature universal themes and narratives that resonate with a global audience, while in-game interactions and community forums allow for the exchange of cultural perspectives and experiences. This digital interaction fosters a sense of global community and mutual understanding among participants.

Additionally, eSports tournaments and events often become cultural spectacles, attracting attention from media outlets and audiences worldwide. These events not only showcase competitive gaming but also highlight cultural elements such as regional gaming styles, fan traditions, and cross-cultural collaborations. By celebrating these diverse cultural expressions, eSports contributes to a broader appreciation of global cultural diversity.

However, the influence of eSports on cultural communication is not without challenges. Issues such as digital divide, cultural misrepresentation, and the potential for cultural homogenization can impact the quality and nature of intercultural exchanges. It is essential to address these challenges to ensure that e-sports remains a positive force for cultural communication and understanding. The rapid expansion of eSports, marked by increasing numbers of participants, viewers, and economic impact, renders it an area that researchers, public officials, and policymakers must pay attention to (Ristić, Živković, and Jemović, 2023). Furthermore, eSports holds the potential to connect with societal groups that have been challenging to engage in the past (Polman et al., 2018).

Gaming and eSports in Serbia

Based on relevant statistical data, it is evident that Serbia plays a prominent role in the regional gaming and e-sports scene (Dašić and Ratković, 2018). Serbia was among the pioneering countries in the region to initiate the organization of both local and regional tournaments, positioning itself as a key

player in this developing industry. Despite this early involvement, the country has yet to make a significant leap forward within the sector. This lack of substantial progress can be attributed to several factors, including a limited understanding of the gaming and e-sports industry as a whole, fragmented efforts by individual enthusiasts, and the underutilization of essential marketing tools and strategies. Gaming and e-sports represent a rapidly growing industry with their own unique communication channels, requiring a well-coordinated approach to fully capitalize on the opportunities they present. Without a deeper comprehension of these specialized channels and a more unified, strategic approach to marketing, Serbia risks falling behind in what is now a highly competitive global industry.

E-Frag was the pioneering organization to introduce eSports in Serbia, marking the beginning of competitive gaming in the region. The early tournaments were mostly local, but they gradually expanded to encompass the surrounding areas. After successfully organizing a number of events, E-Frag decided to take a bold step by hosting the first European Championship in Counter-Strike in Belgrade. This landmark tournament took place in mid-December 2013, attracting 30 European countries, each competing for a chance to reach the semifinals. Four teams had the honor of being hosted in Belgrade, staying at the Kristal Hotel, where the event itself was held. At that time, the prize pool was a modest €3,000. However, the landscape has since evolved, and today the prize pool for such tournaments has grown substantially. A minimum of €100,000 is now required for prize money, not to mention the additional costs involved in organizing an event of this scale (Ratković and Dašić, 2018).

The sports and gaming industry in Serbia has seen significant growth in recent years. According to the Serbian Games Association (SGA) report, 2023 brought a 17% increase in revenue for the top 15 companies in this field. The overall value of the industry has grown considerably, and employment in this sector has also experienced strong growth, with a nearly 98% increase in the number of employees over the past year. Players in Serbia are attracted by both the local and international success of companies developing video games. In 2022, the industry reached a record number of new games in development, with around 100 games currently in progress. Additionally, the top 15 companies generated 10% more revenue than the previous year. Serbia is becoming an increasingly attractive destination for gaming start-ups, thanks in part to support and initiatives such as talent development programs and game development initiatives.

It is estimated that over 4,500 people are employed in the video game sector. The number of employees has increased by an impressive 98% compared to last year, largely due to the relocation of professionals from abroad, particularly from Russia, Ukraine, and Belarus. The roles are diverse, and 60% of our respondents have announced plans to expand their teams. Women make up one-third of the workforce, placing Serbia among the leaders in Europe in terms of having such an inclusive gaming industry. In 2024 alone, 475 new positions are expected to open. The top fifteen gaming companies in Serbia generated €175 million in revenue, marking an increase from the previous year (Figure 4).

Figure 4. Trends in the Serbian Gaming Industry 2017-2023

Year	Employees	Companies + teams + studios	Estimated total revenue in million EUR	Games published
2023	^ 3419	^ 150	^ 175	v 30
2022	^ 1744	^ 140	^ 150	^ 51
2021	^ 1548	^ 130	^ 125	v 35
2020	^ 1431	^ 120	^ 120	v 41
2019	^ 1325	^ 100	^ 80–120	v 46
2018	^ 1281	^ 60	^ 80	^ 70
2017	– n/a	– 30	– n/a	– 89

Source: Serbian gaming industry report 2024.

In a relatively short time, Serbia's gaming ecosystem has undergone remarkable transformation. A growing number of teams are not only focused on game development but also on offering services and

creating tools that are becoming integral to the industry. Companies, studios, and teams differ in size, location, and the variety of projects they engage in. We are seeing an increasing presence of global industry leaders entering the market through acquisitions and investments in local startups. The number of job opportunities across diverse professions is on the rise, and notable progress is also being made in the field of education (Dašić, et al., 2024).

Despite the organizational challenges faced in hosting European and global tournaments, the passion for eSports continues to sustain its popularity in Serbia. A significant factor in this success has been the large number of tournaments organized by players and fans, which were streamed online and quickly attracted substantial viewership and media coverage. Early on, companies with close ties to the gaming industry—such as video game developers, software and hardware producers, and manufacturers of gaming consoles, keyboards, mice, headsets, and other peripherals—became sponsors, playing a key role in the development of e-sports. As these companies expanded their involvement, they began sponsoring players and teams, helping to further bridge the gap between e-sports and traditional sports competitions. While streaming platforms usually sponsor major tournaments and organizations, other prominent brands supporting eSports include Intel, Kingston, Monster, Coca-Cola, Cooler Master, HyperX, and many others (Ratković and Dašić, 2018).

Equipment manufacturers have also contributed to the popularization of e-sports through their consistent presence at such events and by sponsoring players to better promote their products. Their involvement allows them to more accurately understand this emerging market, enabling them to market their products and brands to millions of consumers and secure significantly higher profits (Dašić, Kostadinović, and Kim, 2023).

With the rapid expansion of the e-sports market and the ability to track return on investment, this sector has become increasingly appealing to investors, sponsors, and advertisers. One of the key advantages is the relative ease of market segmentation, as the well-defined characteristics of the mini-communities within specific games allow for precise targeting. Research indicates that both players and audiences tend to fall within the 16 to 47 age range, with a predominantly male demographic (61%-39%). These individuals generally possess higher purchasing power, are exposed to stress, and demonstrate a strong competitive nature.Professional e-sports players often incorporate physical exercise into their routines to stay fit, reflecting the growing professionalism within the industry. Many of these players come from traditional sports backgrounds, transitioning to eSports after injuries sidelined them, in search of new competitive outlets. This unique blend of characteristics makes the eSports market particularly attractive for sponsors and advertisers, as it allows for focused positioning strategies that can effectively engage this dynamic audience. Simultaneously, the measurable growth of the industry continues to draw in investors seeking profitable opportunities in an expanding field (Ratković and Pećić, 2024).

Esports in Serbia has significant potential and should be leveraged as a promotional tool, but it is essential to apply marketing principles tailored to this environment. Additionally, marketing efforts need to focus on raising awareness about the importance of this industry. E-sports should be popularized with an understanding of the value and revenue it can generate.

Conclusion

Esports has a significant impact on education and cultural communication among young people. In the realm of education, e-sports fosters the development of cognitive and social skills such as critical thinking, problem-solving, teamwork, and communication. These skills can be applied across various academic and professional contexts. In terms of cultural communication, e-sports plays a key role in building community among youth. Participants develop connections with people around the world through digital platforms, forming virtual teams and communities that encourage collaboration and understanding of cultural differences. These activities also promote values like teamwork and sportsmanship, which positively influence personal and social development. From an economic perspective, eSports is unique due to its commercially developed, distributed, and maintained gaming artifacts. Unlike many established and recognized sports, e-sports operates on gaming systems designed as commercial products by profit-driven companies.

Despite these positive aspects, there are also negative considerations. Research (Holden, Kaburakis, Rodenberg, 2018) has shown limited awareness and seemingly little preparedness to address

health-related challenges. For instance, a survey conducted in Australia by Bond University and the Interactive Games and Entertainment Association revealed: (i) 98% of households with children have video games; (ii) 68% of the population plays video games; and (iii) the average daily time spent playing video games is 88 minutes. Given the potentially harmful combination of e-sports with stimulants and inactivity, it is crucial to encourage more exercise and physical activity programs for e-sports enthusiasts. Another study (DiFrancisco-Donoghue et al., 2021) found a misconception that regular exercise can negate the negative health effects of prolonged sitting. The physical demands on eSports competitors are three times greater than those on office workers and vary depending on the e-sports games, platforms (computers, consoles, mobile devices), and performance levels (McGee et al., 2021). Finally, the rapid growth in revenue, viewership, player numbers, and exposure has led to issues such as cheating. "Boosting" is a form of cheating where highly skilled players access accounts of weaker players to increase the account's rank in exchange for monetary compensation (Conroy et al., 2021). Future research might need to focus on how to mitigate the negative effects, considering that the growth of the gaming industry is an unstoppable process.

Conflict of interests

The authors declare no conflict of interest.

Author Contributions

Conceptualization: D.D.; methodology: D.D.; resources: B.V. and M.I.K., supervision: D.D., and B.V.; writing—original draft preparation: D.D, and B.V.; writing—review and editing: D.D. All authors have read and agreed to the published version of the manuscript.

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